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_ /David J. McKenzie /_____
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PATENT
Docket No. JP920010333US1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellant:	Shigefumi Odaohhara	
Serial No.:	10/065,807	
Filed:	November 21, 2002	
For:	**ELECTRICAL APPARATUS, COMPUTER EQUIPMENT, INTELLIGENT BATTERY, AND POWER-SUPPLY CONTROL METHOD**	Group Art Unit: 2838
Examiner:	Alexis Asiedua Boateng	

APPEAL BRIEF

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Examiner:

The USPTO received Appellant's timely Notice of Appeal on May 9, 2007, which was filed in response to the Final Office Action mailed February 9, 2007 and the Advisory Action mailed April 27, 2007. Appellant appeals the rejection of pending claims 1, 4, 16, 22, 23, and 26.

This Brief is being filed under the provisions of 37 C.F.R. § 41.37. This Brief is timely as the Brief is being filed within two months of the filing of the notice of appeal. The filing fee set forth in 37 C.F.R. § 41.20(b)(2) of $500.00 is submitted herewith. The Commissioner is

hereby authorized to charge payment of any additional fees associated with this communication, or to credit any overpayment, to Deposit Account No. 50-3533.

1. REAL PARTY IN INTEREST

The real party in interest is the assignee, Lenovo PTE. LTD.

2. RELATED APPEALS AND INTERFERENCES

There are no related appeals, interferences, or judicial proceedings.

3. STATUS OF CLAIMS

The Office Action cites the following art: United States Patent Number 5,982,153 to Nagai (hereinafter Nagai); United States Patent Publication 2002/0026594 by Hayashi (hereinafter Hayashi).

Claims 1, 4, 16, 22, 23 and 26 are pending in the case. Claims 5-15, and 19-21 are withdrawn without traverse. Claims 2, 3, 17, 18, 24, and 25 are canceled. Claims 1, 16, 22, and 23 are independent claims. Claims 1 and 4 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Nagai. Claims 16, 23, and 26 are rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Nagai and Hayashi. Claim 22 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Nagai. The claims remain rejected as set forth in the final rejection as noted in the Advisory Action of April 27, 2007. Appellant appeals the rejection of Claims 1, 4, 16, 22, 23, and 26.

4. STATUS OF AMENDMENTS

No proposed amendments are pending.

5. SUMMARY OF CLAIMED SUBJECT MATTER

The claimed subject matter deals with a capacitor that is switched in and out of a parallel connection with a battery and a computer. The capacitor reduces peak power from the battery, but is switched out when peak power is not needed such as when the battery is disconnected,

when the computer is powered off, or when the computer is in a low power mode. See published version of the application US patent Publication No. 2003/0098679 (hereinafter '679) ¶ 42.

The problem addressed is a peak power demand in battery powered computer equipment. See '679 page 1, ¶ 3, lines 1-4. The peak power demand may cause an over-current protection circuit to shut the battery down. See '679 page 1, ¶ 3, lines 4-7. The present invention improves the power supply by connecting a high-capacity capacitor between a power line and ground when there is peak power demand. See '679 page 4, ¶ 42, lines 1-6. The present invention further disconnects the high-capacity capacitor when there is no peak power demand to reduce a leakage current. See '679 page 1, ¶ 5, lines 8-11; page 4, ¶ 42, lines 1-6.

Specifically, the claimed invention provides an apparatus of claim 1 with a high-capacity capacitor 73 and a switch 74 for disconnecting or connecting the high-capacity capacitor 73 from or to a power line by a circuit, the switch 74 in series combination with the high-capacity capacitor 73 and the series combination of the switch 74 and the high-capacity capacitor 73 being coupled in parallel with a battery 61 and a computer 55 such that the battery 61, the computer 55, and the series combination 73, 74 share two common connections. See '679 figs. 1 and 2, ref. 55, 61, 73, 74; page 4, ¶ 41, lines 1-6; page 4, ¶ 42, lines 1-9. The controller 41 disconnects the high-capacity capacitor 73 when from the power line using the switch 74 when the battery 61 is disconnected from the power line, when the computer 10 is powered off, or when the computer 10 kept in a small-power-consumption mode. See '679, figs 1 and 2, refs. 10, 41, 61, 73, 74; . 3, ref. S104; page 5, ¶ 48, lines 4-20)

The following quotation of claim 1 includes reference numerals and parenthetical references to representative examples of the elements and components recited in claim 1 in compliance with 37 CFR 41.37(c)(1)(v).

1. Apparatus comprising:

a computer which consumes power (See '679 fig. 1, ref. 10; ¶ 5, lines 1-4; ¶ 26, lines 1-3);

a battery which supplies power to the computer through a power line by discharging after

being charged (See '679 , 2, refs. 55, 61; fig. 4, refs. 55, 61; page 4, ¶ 39, lines 3-9);

a high-capacity capacitor connected to the power line in parallel with the battery (See '679 fig. 2, refs. 61, 73, fig. 4, refs. 61, 80; page 4, ¶ 42, lines 1-6);

a switch (See '679 fig. 2, ref. 74; fig. 4, ref. 81; page 4, ¶ 42, lines 1-9) for disconnecting or connecting the high-capacity capacitor from or to the power line by a circuit, said switch in series combination with said high-capacity capacitor and said series combination of said switch and said high-capacity capacitor being coupled in parallel with said battery and said computer such that said battery, said computer, and said series combination share two common connections (See '679 fig. 1, refs. 10, 55; fig. 2, refs. 55, 61, 73, 74; page 4, ¶ 41, lines 1-6; page 4, ¶ 42, lines 1-9); and

a controller (See '679 fig. 2, ref. 62; fig. 4, ref. 41; page 4, ¶ 40, lines 3-10) for controlling operations of the switch, the controller configured to disconnect the high-capacity capacitor from the power line using said switch when the battery is disconnected from the power line, when the computer is powered off, or when the computer kept in a small-power-consumption mode (See '679 fig. 1, ref. 10 fig 2, refs. 61, 73, 74; fig. 3, ref. S104; fig. 4, refs. 41, 61, 80, 81; page 5 ¶ 48, lines 4-20).

The present invention also provides for an intelligent battery as recited in claim 16. The intelligent battery ('679 fig. 1, ref. 52) is set to a computer ('679 fig. 1, ref. 10) to supply power to the computer by discharging after being charged ('679, page 4, ¶ 39, lines 3-9). The intelligent battery includes a cell for supplying power through a predetermined power line (See '679 fig, 2, refs. 55, 61; fig. 4, refs. 55, 61), a high-capacity capacitor connected to the power line in parallel

with the cell under a predetermined condition (See '679 fig. 2, refs. 61, 73, fig. 4, refs. 61, 80; page 4, ¶ 42, lines 1-6), and a switch (See '679 fig. 2, ref. 74; fig. 4, ref. 81; page 4, ¶ 42, lines 1-9) for disconnecting or connecting the high-capacity capacitor from or to the power line by a circuit. The switch is in series combination with the high-capacity capacitor and the series combination of the switch and the high-capacity capacitor being coupled in parallel with the cell and the computer. The cell, the computer, and said series combination share two common connections (See '679 fig. 1, refs. 10, 55; fig. 2, refs. 55, 61, 73, 74; page 4, ¶ 41, lines 1-6; page 4, ¶ 42, lines 1-9). A CPU (See '679 fig. 2, ref. 62; ¶ 42) controls operations of the switch. The CPU disconnects the high-capacity capacitor from the power line using the switch when the computer enters a wake on LAN mode (See '679 ¶ 48, fig. 3, ref. S104).

The following quotation of claim 16 includes reference numerals and parenthetical references to representative examples of the elements and components recited in claim 1 in compliance with 37 CFR 41.37(c)(1)(v).

16. An intelligent battery set to a computer ('679 fig. 1, ref. 10) to supply power to the computer by discharging after being charged ('679, page 4, ¶ 39, lines 3-9), comprising:

a cell for supplying power through a predetermined power line (See '679 fig, 2, refs. 55, 61; fig. 4, refs. 55, 61);

a high-capacity capacitor connected to the power line in parallel with the cell under a predetermined condition (See '679 fig. 2, refs. 61, 73, fig. 4, refs. 61, 80; page 4, ¶ 42, lines 1-6);

a switch (See '679 fig. 2, ref. 74; fig. 4, ref. 81; page 4, ¶ 42, lines 1-9) for disconnecting or connecting the high-capacity capacitor from or to the power line by a circuit,

said switch in series combination with said high-capacity capacitor and said series combination of said switch and said high-capacity capacitor being coupled in parallel with said cell and the computer such that said cell, the computer, and said series combination share two common connections (See '679 fig. 1, refs. 10, 55; fig. 2, refs. 55, 61, 73, 74; page 4, ¶ 41, lines 1-6; page 4, ¶ 42, lines 1-9); and

a CPU (See '679 fig. 2, ref. 62; ¶ 42) for controlling operations of the switch, the CPU configured to disconnect the high-capacity capacitor from the power line using said switch when the computer enters a wake on Lan mode (See '679 ¶ 48, fig. 3, ref. S104).

The present invention claims an intelligent battery as claimed in claim 22. The intelligent batter ('679 fig. 1, ref. 52) is set to a computer ('679 fig. 1, ref. 10) to supply power to the computer by discharging after being charged ('679, page 4, ¶ 39, lines 3-9). The intelligent battery includes a cell for supplying power through a predetermined power line (See '679 fig, 2, refs. 55, 61; fig. 4, refs. 55, 61), and a high-capacity capacitor connected to the power line in parallel with the cell under a predetermined condition (See '679 fig. 2, refs. 61, 73, fig. 4, refs. 61, 80; page 4, ¶ 42, lines 1-6). The high-capacity capacitor has an equivalent series resistance in the range of ten to one hundred milliwatts and a capacitance in the range of zero point one to ten Farads (See '679 fig. 2, ref. 73; fig. 4, ref. 80; page ¶ 8, page 1, lines 7-1; page 2, ¶ 15, lines 1-8; page 4, ¶ 42, lines 1-6). The intelligent battery also includes a switch (See '679 fig. 2, ref. 74; fig. 4, ref. 81; page 4, ¶ 42, lines 1-9) for disconnecting or connecting the high-capacity capacitor from or to the power line by a circuit. The switch in series combination with the high-capacity capacitor and the series combination of the switch and the high-capacity capacitor being coupled in parallel with the cell and the computer such that the cell, the computer, and the series

combination share two common connections (See '679 fig. 1, refs. 10, 55; fig. 2, refs. 55, 61, 73, 74; page 4, ¶ 41, lines 1-6; page 4, ¶ 42, lines 1-9). A CPU controls operations of the switch (See '679 fig. 2, ref. 62; ¶ 42). The CPU detects a state in which the cell is not connected to the computer or a state in which it is unnecessary to supply a peak power to the computer when the cell is set to the computer and controls operations of the switch based on a detected state (See '679 page 4, ¶ 48, lines 4-20, fig. 2, ref. 62; fig. 3, ref. S104).

The following quotation of claim 22 includes reference numerals and parenthetical references to representative examples of the elements and components recited in claim 1 in compliance with 37 CFR 41.37(c)(1)(v).

22. An intelligent battery set to a computer ('679 fig. 1, ref. 10) to supply power to the computer by discharging after being charged ('679, page 4, ¶ 39, lines 3-9), comprising:

a cell for supplying power through a predetermined power line (See '679 fig, 2, refs. 55, 61; fig. 4, refs. 55, 61);

a high-capacity capacitor connected to the power line in parallel with the cell under a predetermined condition (See '679 fig. 2, refs. 61, 73, fig. 4, refs. 61, 80; page 4, ¶ 42, lines 1-6), the high-capacity capacitor having an equivalent series resistance in the range of ten to one hundred milliwatts and a capacitance in the range of zero point one to ten Farads (See '679 fig. 2, ref. 73; fig. 4, ref. 80; page ¶ 8, page 1, lines 7-1; page 2, ¶ 15, lines 1-8; page 4, ¶ 42, lines 1-6);

a switch (See '679 fig. 2, ref. 74; fig. 4, ref. 81; page 4, ¶ 42, lines 1-9) for disconnecting or connecting the high-capacity capacitor from or to the power line by a circuit, said switch in series combination with said high-capacity capacitor and said series combination of said switch and said high-capacity capacitor being coupled in parallel with said cell and the computer such

that said cell, the computer, and said series combination share two common connections (See '679 fig. 1, refs. 10, 55; fig. 2, refs. 55, 61, 73, 74; page 4, ¶ 41, lines 1-6; page 4, ¶ 42, lines 1-9); and

a CPU for controlling operations of the switch (See '679 fig. 2, ref. 62; ¶ 42);

wherein the CPU detects a state in which the cell is not connected to the computer or a state in which it is unnecessary to supply a peak power to the computer when the cell is set to the computer and controls operations of the switch based on a detected state (See '679 page 4, ¶ 48, lines 4-20, fig. 2, ref. 62; fig. 3, ref. S104).

The present invention also claims an apparatus as claimed in claim 23. The apparatus includes a notebook computer which consumes power ('679 page 3, ¶ 26, lines 3-7; fig. 1, ref. 10), a battery which supplies power to the notebook computer through a power line by discharging after being charged (See '679 fig. 1, refs, 10, 55; fig. 2, refs. 55, 61, page 4, ¶ 39, lines 3-9), a switch (See '679 fig. 4, ref. 81; page 4, ¶ 42, lines 1-9), and a high-capacity capacitor (See '679 fig. 2, refs. 61, 73, fig. 4, refs. 61, 80; page 4, ¶ 42, lines 1-6) coupled in series with the switch to the power line. The series combination of the switch and the high-capacity capacitor is coupled in parallel with the battery and the notebook computer such that the battery, the notebook computer, and the series combination share two common connections (See '679 fig. 1, refs. 10, 55; fig. 2, refs. 55, 61, 73, 74; page 4, ¶ 41, lines 1-6; page 4, ¶ 42, lines 1-9). The switch couples and decouples said high-capacity capacitor from and to the power line (See '679 page 5, ¶ 58, lines 3-7). A controller (See '679 fig. 2, ref. 62; fig. 4, ref. 41; page 4, ¶ 40, lines 3-10) controls operations of the switch. The controller acts to conditionally decouple the high-capacity capacitor from the power line using the switch when the battery is disconnected from the

power line, when the notebook computer is powered off, or when the notebook computer kept in a small-power-consumption mode (See '679 fig. 1, ref. 10 fig 2, refs. 61, 73, 74; fig. 3, ref. S104; fig. 4, refs. 41, 61, 80, 81; page 5 ¶ 48, lines 4-20).

The following quotation of claim 23 includes reference numerals and parenthetical references to representative examples of the elements and components recited in claim 1 in compliance with 37 CFR 41.37(c)(1)(v).

23. Apparatus comprising:

a notebook computer which consumes power ('679 page 3, ¶ 26, lines 3-7; fig. 1, ref. 10);

a battery which supplies power to the notebook computer through a power line by discharging after being charged (See '679 fig. 1, refs, 10, 55; fig. 2, refs. 55, 61; page 4, ¶ 39, lines 3-9);

a switch (See '679 fig. 4, ref. 81; page 4, ¶ 42, lines 1-9);

a high-capacity capacitor (See '679 fig. 2, refs. 61, 73, fig. 4, refs. 61, 80; page 4, ¶ 42, lines 1-6) coupled in series with said switch to the power line, the series combination of said switch and said high-capacity capacitor being coupled in parallel with the battery and the notebook computer such that the battery, the notebook computer, and the series combination share two common connections (See '679 fig. 1, refs. 10, 55; fig. 2, refs. 55, 61, 73, 74; page 4, ¶ 41, lines 1-6; page 4, ¶ 42, lines 1-9);

wherein the switch couples and decouples said high-capacity capacitor from and to the power line (See '679 page 5, ¶ 58, lines 3-7), and

a controller (See '679 fig. 2, ref. 62; fig. 4, ref. 41; page 4, ¶ 40, lines 3-10) for controlling operations of the switch and which acts to conditionally decouple the high-capacity

capacitor from the power line using said switch when the battery is disconnected from the power line, when the notebook computer is powered off, or when the notebook computer kept in a small-power-consumption mode (See '679 fig. 1, ref. 10 fig 2, refs. 61, 73, 74; fig. 3, ref. S104; fig. 4, refs. 41, 61, 80, 81; page 5 ¶ 48, lines 4-20).

6. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

I. Whether the Examiner properly rejected claims 1 and 4 under 35 U.S.C. §102(b) as anticipated by Nagai?

II. Whether the Examiner properly rejected claims 16, 23, and 26 under 35 U.S.C. §103(a) as obvious in view of Nagai and Hayashi?

III. Whether the Examiner properly rejected claim 22 under 35 U.S.C. §103(a) as obvious in view of Nagai?

7. ARGUMENT

I. The rejection of claims 1 and 4 under 35 U.S.C. §102(b) as anticipated by Nagai is improper because Nagai fails to teach each element of the recited claims.

Summary of the Examiner arguments.

[001] The Examiner rejects Claims 1 and 4 under 35 U.S.C. § 102(b) as being anticipated by Nagai. In the Office Action mailed February 9, 2007 and the Advisory Action mailed on April 27, 2007, the Examiner relies on Nagai for teaching a switch SW3 connected in series to a capacitor C1. See Nagai, fig. 7, refs. C1, SW3. The series combination C1/SW3 is in parallel with a battery 5 and an AC power source 2. See Nagai, fig. 7, refs. C1, SW3, 2 and 5.

[002] In the Office Action mailed on February 9, 2007, the Examiner also relies on Nagai for teaching a switch SW1 in series combination with a capacitor C2. The series combination SW1, C2 is in parallel with a battery 5 and an AC power source 2. See Nagai, fig. 2, refs. SW1, C2, 2 and 5. In addition, Nagai teaches disconnecting the capacitor C2 when the terminal voltage of the battery reaches an upper limit of a charging standard. See Nagai, fig. 2, ref. 12; col. 3, lines 17-59; col. 4, lines 23-45.

Response.

[003] Appellant respectfully reaffirms the arguments raised against the rejection of claims 1 and 4 under 35 USC §102(b) set forth in the response mailed April 9, 2007 and raises new arguments in response to the Examiners remarks in the Advisory Action mailed April 27, 2007.

The legal requirements.

[004] "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987). For a *prima facie* case of anticipation, each and every element of the claimed invention must be identically disclosed in a single prior art reference; and those elements must be arranged or connected together in a single

reference in the same way as specified in the patent claim. *Lindemenn Maschinenfabrik GmbH vs. American Hoist and Derick Co.,* 730 F2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984).

Claim 1

[005] Claim 1 recites:

1. Apparatus comprising:

a **computer** which consumes power;

a battery which supplies power to the computer through a power line by discharging after being charged;

a **high-capacity capacitor** connected to the power line in parallel with the battery;

a switch for disconnecting or connecting the high-capacity capacitor from or to the power line by a circuit, said switch in series combination with said high-capacity capacitor and **said series combination of said switch and said high-capacity capacitor being coupled in parallel with said battery and said computer such that said battery, said computer, and said series combination share two common connections**; and

a controller for controlling operations of the switch, the controller configured to disconnect the high-capacity capacitor from the power line using said switch **when the battery is disconnected from the power line, when the computer is powered off, or when the computer kept in a small-power-consumption mode**.

[006] Appellant maintains the position that Nagai does not teach or disclose each element of claim 1. Specifically, Nagai does not teach a series combination of a switch and a high-capacity capacitor being coupled in parallel with a battery and a computer such that the battery, the computer, and the series combination share two common connections. Although

Nagai does disclose a series combination of a capacitor C1 and switch SW3 in parallel with a battery 5, Nagai does not teach a **computer** in parallel with the series combination C1/SW3 and the battery 5 such that the battery, the computer, and the series combination share two common connections. See Nagai, fig. 7, refs. C1, SW3, 5.

[007] In addition, Appellant maintains that Nagai does not teach a high-capacity capacitor in series with a switch. Nagai discloses that the capacitor C1 is of a low capacity. See Nagai, fig. 7, ref. C1; col. 10, lines 40-42. The capacitor C1 in series with the switch SW3 therefore cannot be the high-capacity capacitor as claimed by the present invention as the capacitor C1 is not a high-capacity capacitor. Nagai, fig. 7, refs. C1, SW3; col. 10, lines 40-42.

[008] Nagai also does not teach the limitation of disconnecting the high-capacity capacitor from the power line when the battery is disconnected from the power line, when the computer is powered off, or when the computer is kept in a small-power consumption mode. Instead, Nagai discloses that the series combination of capacitor C1 and switch SW3 is disconnected from the power line when the charging voltage is within the range of the charging standard voltage. Nagai, fig. 7, refs. C1, SW3; col. 10, lines 28-34. Because Nagai does not teach a series combination of a switch and a high-capacity capacitor being coupled in parallel with a battery and a computer such that the battery, the computer, and the series combination share two common connections, Appellant submits that claim 1 is allowable. In addition, Nagai does not teach the high-capacity capacitor or disconnecting the high-capacity capacitor from the power line when the battery is disconnected from the power line, when the computer is powered off, or when the computer is kept in a small-power consumption mode, thus Appellant submits that claim 1 is allowable.

[009] Appellant further traverses the Examiner's argument in the Office Action mailed on February 9, 2007 that the series combination of the switch SW1 with the capacitor C2 is in parallel with the battery 5 and a computer. See Office Action of February 9, 2007, page 2, lines 18-21. See also Nagai, fig. 2, refs. C2, SW1, 5. While the series combination SW1/C2 is in parallel with a battery 5, there is no computer in parallel with the battery 5 and the series combination C2/SW1. In addition, the series combination C2/SW1, the battery 5, and the AC power source 2 do not share two common connections. See Nagai, fig. 2, refs. C2, SW1, 2, 5.

[010] Appellant therefore submits that Figures 2 and 4 of Nagai also do not disclose all the elements of claim 1. Claim 4 depends from claim 1 and is allowable for at least the same reasons as claim 1.

II. The rejection of claims 16, 23, and 26 under 35 U.S.C. §103(a) as obvious in view of Nagai and Hayashi is improper because Nagai and Hayashi fail to teach each element of claims .

Summary of the Examiner arguments.

[011] The Examiner rejects Claims 16, 23, and 26 under 35 U.S.C. § 103(a) as being unpatentable over Nagai in view of Hayashi. The Examiner relies heavily on Nagai for the elements of claims 16 and 23. Specifically, in the Office Action mailed February 9, 2007 and the Advisory Action mailed on April 27, 2007, the Examiner relies on Nagai for teaching a switch SW3 connected in series to a capacitor C1. See Nagai, fig. 7, refs. C1, SW3. The series combination C1/SW3 is in parallel with a battery 5 and an AC power source 2. See Nagai, fig. 7, refs. C1, SW3, 2 and 5.

[012] In the Office Action mailed on February 9, 2007, the Examiner also relies on Nagai for teaching a switch SW1 in series combination with a capacitor C2. The series combination C2/SW1 is in parallel with a battery 5 and an AC power source 2. See Nagai, fig. 2, refs. C2, SW1, 2 and 5. The Examiner further relies on disconnecting the capacitor C2 when the terminal voltage of the battery reaches an upper limit of a charging standard. See Nagai, fig. 2, ref. 12; col. 3, lines 17-59; col. 4, lines 23-45. In addition, the Examiner relies on Hayashi for teaching the wake on Local Area Network (LAN) process. Hayashi, page 6, ¶ 121, lines 1-5.

Response.

[013] Appellant respectfully reaffirms the arguments raised against the rejection of claims 16 and 23 under 35 USC §103(a) set forth in the response mailed April 9, 2007 and raise new arguments in response to the Examiner's remarks in the Advisory Action mailed April 27, 2007.

The legal requirements.

It is well settled that the PTO has the burden to establish a *prima facie* case of obviousness. *In re Glaug*, 2002 U.S. App. Lexis 4246, *4 (Fed. Cir. March 15, 2002); MPEP §2142. "To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art." MPEP §2143.03 (emphasis added).

Beyond the requirement that the prior art teach or suggest all the claim limitations, the four factual inquires for determining obviousness are as follows:

(A) Determining the scope and contents of the prior art;

(B) Ascertaining the differences between the prior art and the claims in issue;

(C) Resolving the level of ordinary skill in the pertinent art; and

(D) Evaluating evidence of secondary considerations. MPEP § 2141 I.

Claim 16

[014] Claim 16 recites:

16. An intelligent battery set to a computer to supply power to the computer by discharging after being charged, comprising:

a cell for supplying power through a predetermined power line;

a **high-capacity capacitor** connected to the power line in parallel with the cell under a predetermined condition;

a switch for disconnecting or connecting the high-capacity capacitor from or to the power line by a circuit, said switch in series combination with said high-capacity capacitor and **said series combination of said switch and said high-capacity capacitor being coupled in parallel with said cell and the computer such that said cell, the computer, and said series combination share two common connections**; and

a CPU for controlling operations of the switch, the CPU configured to **disconnect the high-capacity capacitor from the power line using said switch when the computer enters a wake on Lan mode**.

[015] Appellants maintain the position that neither Nagai nor Hayashi teach or disclose each element of claim 16. Claim 16 is representative of the other rejected independent claim, claim 23.

[016] As discussed above, Nagai does not teach a series combination of a switch and a high-capacity capacitor being coupled in parallel with a battery and a computer such that the battery, the **computer**, and the series combination share two common connections, the **high-capacity capacitor**. Specifically, Nagai does not teach the computer in parallel with the battery and the series combination. Nagai also teaches a **low-capacity capacitor** C1 in series with the switch SW3, rather than the **high-capacity capacitor** claimed in claim 16. See Nagai, col. 10, lines 40-42; fig. 7, refs. C1, SW3. As noted in the Office Action of February 9, 2007, Nagai does not disclose disconnecting the capacitor when the computer enters a wake on LAN mode. Office Action of February 9, 2007, page 4, lines 4-7.

[017] Hayashi teaches a capacitor 18 in series with a switch 11f, the series combination of the switch 11f and the capacitor 18 being coupled in parallel with fuel cell 3 and a computer 1 such that the fuel cell 3, the computer 1, and the series combination share two common connections. See Hayashi, fig. 1, ref. 1; fig. 10, ref. 3; fig. 14, refs. 18, 11f. However, Hayashi does not disclose disconnecting the capacitor from the power line using the switch when the computer enters a wake on LAN mode as recited in Claim 16. Instead, Hayashi teaches connecting the capacitor 18 to the power line when the output of the fuel cell 3 reaches a pre-determined value. Hayashi, fig. 10, ref. 3; fig. 14, refs. 11f, 18; page 5, ¶ 115, lines 4-7.

[018] Hayashi also teaches activating a computer when a wake on LAN condition is satisfied. See Hayashi, page 6, ¶ 121, lines 1-5. However, Hayashi does not disclose disconnecting the capacitor when the computer enters a wake on LAN mode. Hayashi in fact teaches away from disconnecting the capacitor when the computer enters a wake on LAN mode

by specifying disconnecting the fuel cell 3 by disconnecting a power input terminal 17 when the computer powers up as a result of the wake on LAN and enters a neutral mode 40. See Hayashi, fig. 7, ref. 17; fig. 9, ref. 40, page 6, ¶119, lines 1-9. Therefore neither Nagai nor Hayashi teach disconnecting the high-capacity capacitor when the computer enters a wake on LAN mode.

[019] Because neither Nagai nor Hayashi teach all of the elements of claim 16, Appellant submits that claim 16 is allowable. Claim 23 includes the missing element of a disconnecting the high-capacity capacitor from the power line when the computer enters a wake on LAN mode as discussed above in relation to claim 16. Therefore, claim 23 is allowable for at least the same reasons as Claim 16. Claim 26 depends from claims 23 and is allowable for at least the same reasons as the independent claim.

III. The rejection of claim 22 under 35 U.S.C. §103(a) as obvious in view of Nagai is improper because Nagai fails to teach each element of claim 22.

Summary of the Examiner arguments.

[020] The Examiner rejects Claim 22 under 35 U.S.C. § 103(a) as being unpatentable over Nagai. The Examiner relies heavily on Nagai for the elements of claim 22. Specifically, in the Office Action mailed February 9, 2007 and the Advisory Action mailed on April 27, 2007, the Examiner relies on Nagai for teaching a switch SW3 connected in series to a capacitor C1. See Nagai, fig. 7, refs. C1, SW3. The series combination is in parallel with a battery 5 and an AC power source 2. See Nagai, fig. 7, refs. C1, SW3, 2 and 5.

[021] In the Office Action mailed on February 9, 2007, the Examiner also relies on Nagai for teaching a switch SW1 in series combination with a capacitor C2. The series combination SW1/C2 is in parallel with a battery 5 and an AC power source 2. See Nagai, fig. 2, refs. SW1, C2, 2 and 5. The Examiner further relies on disconnecting the capacitor C2 when the terminal voltage of the battery reaches an upper limit of a charging standard. See Nagai, fig. 2, ref. 12; col. 3, lines 17-59; col. 4, lines 23-45. In addition, the Examiner relies on Hayashi for teaching the wake on Local Area Network (LAN) process. Hayashi, ¶121.

Response.

[022] Appellant respectfully reaffirms the arguments raised against the rejection of claims 16 and 23 under 35 USC §103(a) set forth in the response mailed April 9, 2007 and raise new arguments in response to the Examiner's remarks in the Advisory Action mailed April 27, 2007.

The legal requirements.

It is well settled that the PTO has the burden to establish a *prima facie* case of obviousness. *In re Glaug*, 2002 U.S. App. Lexis 4246, *4 (Fed. Cir. March 15, 2002); MPEP §2142. "To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art." MPEP §2143.03 (emphasis added).

Beyond the requirement that the prior art teach or suggest all the claim limitations, the four factual inquires for determining obviousness are as follows:

(A) Determining the scope and contents of the prior art;

(B) Ascertaining the differences between the prior art and the claims in issue;

(C) Resolving the level of ordinary skill in the pertinent art; and

(D) Evaluating evidence of secondary considerations. MPEP § 2141 I.

Claim 22

[023] Claim 22 recites:

22. An intelligent battery set to a computer to supply power to the computer by discharging after being charged, comprising:

a cell for supplying power through a predetermined power line;

a **high-capacity capacitor** connected to the power line in parallel with the cell under a predetermined condition, the high-capacity capacitor having an equivalent series resistance in the range of ten to one hundred milliwatts and **a capacitance in the range of zero point one to ten Farads**;

a switch for disconnecting or connecting the high-capacity capacitor from or to the power line by a circuit, said switch in series combination with said high-capacity capacitor and **said series combination of said switch and said high-capacity capacitor being coupled in parallel with said cell and the computer such that said cell, the computer, and said series combination share two common connections**; and

a CPU for controlling operations of the switch;

wherein the CPU detects a state in which the cell is not connected to the computer or a state in which it is unnecessary to supply a peak power to the computer when the cell is set to the computer and controls operations of the switch based on a detected state.

[024] Appellants maintain the position that Nagai does not teach each element of claim 22. As discussed above, Nagai does not teach a series combination of a switch and a high-capacity capacitor being coupled in parallel with a cell and a **computer** such that the battery, the **computer**, and the series combination share two common connections, the **high-capacity capacitor** Specifically, Nagai does not teach the **computer** in parallel with the cell and the series combination. Nagai also teaches a **low-capacity capacitor** C1 in series with the switch SW3. See Nagai, col. 10, lines 40-42; fig. 7, refs. C1, SW3 rather than the high-capacity capacitor claimed in claim 16. Because Nagai does not teach all of the elements of claim 22, Appellant submits that claim 22 is allowable.

SUMMARY

In view of the foregoing, Appellant respectfully asserts that each of the claims on appeal has been improperly rejected because the rejections under 35 U.S.C. §102(b) and §103(a) are improper. Therefore, Appellant respectfully requests reversal of the Examiner's rejections under §102(b) and §103(a), and urges that pending claims 1, 4, 16, 22, 23, and 26 are ready for prompt allowance. Appellant appeals to the Board's objective and reasoned decision on this matter.

Respectfully submitted,

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8. CLAIMS APPENDIX

The claims involved in the appeal, namely Claims 1, 4, 16, 22, 23, and 26, are listed below.

1. Apparatus comprising:

a computer which consumes power;

a battery which supplies power to the computer through a power line by discharging after being charged;

a high-capacity capacitor connected to the power line in parallel with the battery;

a switch for disconnecting or connecting the high-capacity capacitor from or to the power line by a circuit, said switch in series combination with said high-capacity capacitor and said series combination of said switch and said high-capacity capacitor being coupled in parallel with said battery and said computer such that said battery, said computer, and said series combination share two common connections; and

a controller for controlling operations of the switch, the controller configured to disconnect the high-capacity capacitor from the power line using said switch when the battery is disconnected from the power line, when the computer is powered off, or when the computer kept in a small-power-consumption mode.

4. Apparatus according to claim 1, wherein the high-capacity capacitor and the switch are integrated so that they can be set to the computer.

16. An intelligent battery set to a computer to supply power to the computer by discharging after being charged, comprising:

a cell for supplying power through a predetermined power line;

a high-capacity capacitor connected to the power line in parallel with the cell under a predetermined condition;

a switch for disconnecting or connecting the high-capacity capacitor from or to the power line by a circuit, said switch in series combination with said high-capacity capacitor and said series combination of said switch and said high-capacity capacitor being coupled in parallel with said cell and the computer such that said cell, the computer, and said series combination share two common connections; and

a CPU for controlling operations of the switch, the CPU configured to disconnect the high-capacity capacitor from the power line using said switch when the computer enters a wake on Lan mode.

22. An intelligent battery set to a computer to supply power to the computer by discharging after being charged, comprising:

a cell for supplying power through a predetermined power line;

a high-capacity capacitor connected to the power line in parallel with the cell under a predetermined condition, the high-capacity capacitor having an equivalent series resistance in the range of ten to one hundred milliwatts and a capacitance in the range of zero point one to ten Farads;

a switch for disconnecting or connecting the high-capacity capacitor from or to the power line by a circuit, said switch in series combination with said high-capacity capacitor and said series combination of said switch and said high-capacity capacitor being coupled in parallel

with said cell and the computer such that said cell, the computer, and said series combination share two common connections; and

a CPU for controlling operations of the switch;

wherein the CPU detects a state in which the cell is not connected to the computer or a state in which it is unnecessary to supply a peak power to the computer when the cell is set to the computer and controls operations of the switch based on a detected state.

23. Apparatus comprising:

a notebook computer which consumes power;

a battery which supplies power to the notebook computer through a power line by discharging after being charged;

a switch;

a high-capacity capacitor coupled in series with said switch to the power line, the series combination of said switch and said high-capacity capacitor being coupled in parallel with the battery and the notebook computer such that the battery, the notebook computer, and the series combination share two common connections;

wherein the switch couples and decouples said high-capacity capacitor from and to the power line, and

a controller for controlling operations of the switch and which acts to conditionally decouple the high-capacity capacitor from the power line using said switch when the battery is disconnected from the power line, when the notebook computer is powered off, or when the notebook computer kept in a small-power-consumption mode.

26. Apparatus according to claim 23, wherein said high-capacity capacitor and said switch are integrated so that they can be set to the notebook computer.

9. EVIDENCE APPENDIX

There is no material to be included in the Evidence Appendix.

10. RELATED PROCEEDINGS APPENDIX

There is no material to be included in the Related Proceedings Appendix.